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10/7/03, 962

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Group Art Unit 2877
Examiner..... Isiaka Akanbi
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Title: Densitometers and Methods for Measuring Optical Density

BRIEF OF APPELLANT

To: Mail Stop Appeal Brief-Patents
Commissioner of Patents
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Appellant appeals from the Office Action mailed May 23, 2006. The Commissioner is authorized to charge the fee required under 37 C.F.R. § 41.20(b)(2) to Deposit Account No. 08-2025.

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Brief of Appellant

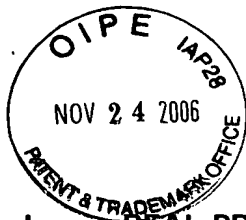


TABLE OF CONTENTS

I.	<u>REAL PROPERTY IN INTEREST</u>	1
II.	<u>RELATED APPEALS AND INTERFERENCES</u>	1
III.	<u>STATUS OF CLAIMS</u>	1
IV.	<u>STATUS OF AMENDMENTS</u>	1
V.	<u>SUMMARY OF CLAIMED SUBJECT MATTER</u>	1
VI.	<u>GROUND OF REJECTION TO BE REVIEWED ON APPEAL</u>	3
VII.	<u>ARGUMENT</u>	4
A.	Claim 30 is definite and the indefiniteness rejection is improper	4
B.	Claim 31 is definite and the indefiniteness rejection is improper	5
C.	Claim 32 is definite and the indefiniteness rejection is improper	6
D.	Claim 33 is definite and the indefiniteness rejection is improper	6
E.	Claim 34 is definite and the indefiniteness rejection is improper	7
F.	Claim 35 is definite and the indefiniteness rejection is improper	7
G.	Claim 36 is definite and the indefiniteness rejection is improper	8
H.	Positively-recited limitations of claims 1-8 are not disclosed nor suggested by the teachings of Hubble and the 102 and 103 rejections of the claims over Hubble are improper for at least this reason	8
I.	Positively-recited limitations of claims 9-12 are not disclosed nor suggested by the teachings of Hubble and the 102 and 103 rejections of the claims over Hubble are improper for at least this reason	9

J.	Positively-recited limitations of claims 13-20, 22-24 and 38-39 are not disclosed nor suggested by the teachings of Hubble and the 102 and 103 rejections of the claims over Hubble are improper for at least this reason.....	10
K.	Positively-recited limitations of claims 25-29 and 43-44 are not disclosed nor suggested by the teachings of Hubble and the 102 rejections of the claims over Hubble are improper for at least this reason.....	11
L.	Positively-recited limitations of claims 39 and 44 are not disclosed nor suggested by the teachings of Hubble and the 102 rejections of the claims over Hubble are improper for at least this reason.....	11
M.	Positively-recited limitations of claim 17 are not disclosed nor suggested by the teachings of Hubble and the 102 rejections of the claims over Hubble are improper for at least this reason.....	12
N.	Positively-recited limitations of claim 28 are not disclosed nor suggested by the teachings of Hubble and the 102 rejections of the claims over Hubble are improper for at least this reason.....	12
O.	There is insufficient motivation to combine the teachings of Yamanishi with the teachings of Hubble and limitations of the claims are not disclosed and the 103 rejection of claims 6-8, 12 and 16 is improper for at least this reason.....	13
P.	Conclusion.....	14
VIII.	<u>CLAIMS APPENDIX</u>	A-1
IX.	<u>EVIDENCE APPENDIX</u>	B-1
X.	<u>RELATED PROCEEDINGS APPENDIX</u>	C-1

**I. REAL PARTY IN INTEREST**

The real party in interest of this application is Hewlett-Packard Development Company, L.P. as evidenced by the full assignment of the pending application to Hewlett-Packard Development Company, L.P. recorded starting at Reel 014483, Frame 0194, in the Assignment Branch of the Patent and Trademark Office. The Hewlett-Packard Development Company, L.P., is a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II. RELATED APPEALS AND INTERFERENCES

Appellant, Appellant's undersigned legal representative, and the assignee of the pending application are aware of no appeals or interferences which will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF THE CLAIMS

Claims 1-44 are pending. Claims 1-20, 22-36, 38-39 and 43-44 stand rejected. Claims 21, 37, and 40-42 recite allowable subject matter. Appellant appeals the rejections of claims 1-20, 22-36, 38-39 and 43-44.

IV. STATUS OF AMENDMENTS

No amendments have been filed after the Office Action mailed May 23, 2006.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Concise explanations of the subject matter defined in each of the independent claims and argued dependent claims involved in the appeal follow with respect to exemplary illustrative embodiments of the specification and figures.

Referring to independent claim 1, Appellants refer to Fig. 1 and the specification at page 3, lines 18+ which provide a method according to one

*PDNO.200208926-1
Serial No. 10/658,939
Brief of Appellant*

embodiment including determining a color, selecting an illumination source, illuminating the area, receiving the radiation and converting the received radiation.

Referring to dependent claim 6, Appellants refer to Fig. 1 and the specification at page 3, lines 18+ which provide a method according to one embodiment including compensation for the effects of heating. Additional details are described at page 6, lines 14+ of the specification.

Referring to dependent claim 7, one embodiment of the compensating comprising measuring the voltage across the light emitting diode is disclosed at page 6, lines 14+ of the specification.

Referring to dependent claim 8, one embodiment of the compensating comprising generating a corrected signal is disclosed at page 6, lines 14+ of the specification.

Referring to independent claim 9, Appellants refer to Fig. 5 and the specification at page 8, lines 13+ which provide one embodiment of an apparatus for printing, automatically selecting, illuminating and receiving the signal indicative of optical density according to one embodiment.

Referring to dependent claim 12, Appellants refer to Fig. 1 and the specification at page 3, lines 18+ which provide a method according to one embodiment including compensation for the effects of heating. Additional details are described at page 6, lines 14+ of the specification.

Referring to independent claim 13, Appellants refer to Fig. 3 and the specification at page 6, lines 32+ which disclose a densitometer 210 according to one embodiment including an illumination source 215, sensor 220 and processor 205.

Referring to dependent claim 16, Appellants refer to Fig. 1 and the specification at page 3, lines 18+ which provide a method according to one embodiment including compensation for the effects of heating. Additional details are described at page 6, lines 14+ of the specification.

Referring to dependent claim 17, Appellants refer to Fig. 1 and the specification at page 3, lines 18+ which provide determination of a color at act 10 and selection at act 15 according to one embodiment.

Referring to independent claim 25, Appellants refer to Fig. 5 and the specification at page 8, lines 13+ which provide means for printing 310, a controller 315 and a densitometer 210 according to one embodiment.

Referring to dependent claim 28, Appellants refer to Fig. 1 and the specification at page 3, lines 18+ which provide determination of a color at act 10 and selection at act 15 according to one embodiment.

Referring to dependent claim 39, Appellants refer to Fig. 1 and the specification at page 5, lines 10+ which provide conversion to a standardized signal indicative of standardized optical density according to one embodiment.

Referring to dependent claim 44, Appellants refer to Fig. 1 and the specification at page 5, lines 10+ which provide conversion to a standardized signal indicative of standardized optical density according to one embodiment.

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

- A. The indefiniteness rejection of claim 30.
- B. The indefiniteness rejection of claim 31.
- C. The indefiniteness rejection of claim 32.
- D. The indefiniteness rejection of claim 33.
- E. The indefiniteness rejection of claim 34.
- F. The indefiniteness rejection of claim 35.
- G. The indefiniteness rejection of claim 36.
- H. The 102 and 103 rejections of claims 1-8 over Hubble.
- I. The 102 and 103 rejections of claims 9-12 over Hubble.
- J. The 102 and 103 rejections of claims 13-20, 22-24 and 38-39 over Hubble.
- K. The 102 rejection of claims 25-29 and 43-44 over Hubble.
- L. The 102 rejection of claims 39 and 44 over Hubble.

- M. The 102 rejection of claims 17 over Hubble.
- N. The 102 rejection of claims 28 over Hubble.
- O. The 103 rejection of claims 6-8, 12 and 16 over the combination of Yamanishi and Hubble.

VII. ARGUMENT

A. Claim 30 is definite and the indefiniteness rejection is improper.

35 U.S.C. §112, second paragraph, requires that the claims particularly point out and distinctly claim the subject matter that *the patent applicant regards as their invention*. "Distinctly" has been interpreted to mean simply that the claim must have a clear and definite meaning when construed in the light of the complete patent document. *Standard Oil Company v. American Cyanamid Company*, 774 F.2d 448, 227 USPO 293 (Fed. Cir. 1985). Further, the definiteness of the claim language employed must not be analyzed in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one of having ordinary skill in the pertinent art.

Applicant refers to MPEP §2173.02 (8th ed., rev. 5) which states the essential inquiry pertaining to a §112, second paragraph requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of:

- (A) the content of the particular application disclosure;
- (B) the teachings of the prior art; and
- (C) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

In reviewing a claim for compliance with 35 U.S.C. §112, second paragraph, the Examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice

function required by 35 U.S.C. §112, second paragraph by providing clear warning to others as to what constitutes infringement of the patent. MPEP §2173.02 (8th ed., rev. 5). A fundamental principle contained in 35 U.S.C. 112, second paragraph is that applicants are their own lexicographers and they can define in the claims what they regard as their invention essentially in whatever terms they choose. MPEP §2173.01 (8th ed., rev. 5).

Applicant submits that the claims are clear and definite on their face. Moreover, one of ordinary skill in the art with the opportunity to consider and review the contents of the application disclosure pursuant to the above authority would clearly understand the language of the claims.

In particular, referring to the 112 rejection of claim 30, such claim depends from claim 1. Claim 1 recites determining a color on an area. Claim 30 operates to further limit the determining of claim 1 by reciting that the determining comprises using data regarding a marking agent used to print the color on the area. Accordingly, when read in combination, the limitations recite that the determining the color on the area comprises using data regarding a marking agent used to print the color on the area. Appellants respectfully submit that such language is clearly understandable by one of skill in the art and one of ordinary skill in the art would have no problem understanding claim 30.

Appellants respectfully submit the claim complies with 112, second paragraph, and Appellants request withdrawal of the indefiniteness rejection of the claim for at least these reasons.

No prior art rejection has been presented against the claim and Appellants respectfully request allowance of the claim.

B. Claim 31 is definite and the indefiniteness rejection is improper.

Referring to the 112 rejection of claim 31, such dependent claim depends from claim 30. Claim 30 introduces the limitation "data regarding a marking agent" and claim 31 introduces the limitation "image data." Claim 31 further recites that the data regarding the marking agent is accessed from the image data. Appellants respectfully submit there is no confusion since the limitations of claim 31 properly include new limitations and clearly refer to other limitations introduced in other claims from which claim 31 depends. Appellants respectfully submit that such

language is clearly understandable by one of skill in the art and one of ordinary skill in the art would have no problem understanding claim 31.

Appellants respectfully submit the claim complies with 112, second paragraph, and Appellants request withdrawal of the indefiniteness rejection of the claim for at least these reasons.

No prior art rejection has been presented against the claim and Appellants respectfully request allowance of the claim.

C. Claim 32 is definite and the indefiniteness rejection is improper.

Referring to the 112 rejection of claim 32, such claim depends from claim 30. Claim 30 further limits the determining limitation of claim 1 and recites that the determining comprises using data. Claim 32 operates to introduce an additional limitation that the data of claim 30 is provided before the determining. Accordingly, when claims 1, 30 and 32 are read in combination, the limitations recite that the determining the color on the area comprises using data provided before the determining. Appellants respectfully submit that such language is clearly understandable by one of skill in the art and one of ordinary skill in the art would have no problem understanding claim 32.

Appellants respectfully submit the claim complies with 112, second paragraph, and Appellants request withdrawal of the indefiniteness rejection of the claim for at least these reasons.

No prior art rejection has been presented against the claim and Appellants respectfully request allowance of the claim.

D. Claim 33 is definite and the indefiniteness rejection is improper.

Referring to the 112 rejection of claim 33, such claim depends from claim 30. Claim 30 further limits the determining limitation of claim 1 and recites that the determining comprises using data. Claim 33 operates to introduce additional limitations that the data of claim 30 is provided during the printing of the marking agent on the area and the data indicates the color of the marking agent used to print the color on the area. Accordingly, when claims 1, 30 and 33 are read in combination, the limitations recite that the determining the color on the area comprises using data provided during the printing of the marking agent on the area

and the data indicates the color of the marking agent used to print the color on the area. Appellants respectfully submit that such language is clearly understandable by one of skill in the art and one of ordinary skill in the art would have no problem understanding claim 33.

Appellants respectfully submit the claim complies with 112, second paragraph, and Appellants request withdrawal of the indefiniteness rejection of the claim for at least these reasons.

No prior art rejection has been presented against the claim and Appellants respectfully request allowance of the claim.

E. Claim 34 is definite and the indefiniteness rejection is improper.

Referring to the 112 rejection of claim 34, such claim depends from claim 30. Claim 30 further limits the determining limitation of claim 1 and recites that the determining comprises using data. Claim 34 operates to introduce additional limitations that the data of claim 30 is accessed from storage circuitry. Accordingly, when claims 1, 30 and 34 are read in combination, the limitations recite determining the color on the area using data and accessing the data from storage circuitry. Appellants respectfully submit that such language is clearly understandable by one of skill in the art and one of ordinary skill in the art would have no problem understanding claim 33.

Appellants respectfully submit the claim complies with 112, second paragraph, and Appellants request withdrawal of the indefiniteness rejection of the claim for at least these reasons.

No prior art rejection has been presented against the claim and Appellants respectfully request allowance of the claim.

F. Claim 35 is definite and the indefiniteness rejection is improper.

Referring to the 112 rejection of claim 35, such claim depends from claim 1. Claim 1 recites determining a color on an area. Claim 35 operates to further limit the determining of claim 1 by reciting that the determining comprises determining without sensing of the area recited in claim 1. Accordingly, when read in combination, the limitations recite that the determining the color on the area comprises determining without sensing the area. Appellants respectfully submit

that such language is clearly understandable by one of skill in the art and one of ordinary skill in the art would have no problem understanding claim 35.

Appellants respectfully submit the claim complies with 112, second paragraph, and Appellants request withdrawal of the indefiniteness rejection of the claim for at least these reasons.

No prior art rejection has been presented against the claim and Appellants respectfully request allowance of the claim.

G. Claim 36 is definite and the indefiniteness rejection is improper.

Referring to the 112 rejection of claim 36, such claim depends from claim 1. Claim 1 recites determining a color on an area. Claim 36 operates to further limit the determining of claim 1 by reciting that the determining comprises determining before completion of printing of the color on the area. Accordingly, when read in combination, the limitations recite that the determining the color on the area comprises determining before completion of printing of the color on the area. Appellants respectfully submit that such language is clearly understandable by one of skill in the art and one of ordinary skill in the art would have no problem understanding claim 36.

Appellants respectfully submit the claim complies with 112, second paragraph, and Appellants request withdrawal of the indefiniteness rejection of the claim for at least these reasons.

No prior art rejection has been presented against the claim and Appellants respectfully request allowance of the claim.

H. Positively-recited limitations of claims 1-8 are not disclosed nor suggested by the teachings of Hubble and the 102 and 103 rejections of the claims over Hubble are improper for at least this reason.

With respect to the 102 rejection over Hubble, Applicant notes the requirements of MPEP §2131 (8th ed., rev. 5), which states that TO ANTICIPATE A CLAIM, THE REFERENCE MUST TEACH EVERY ELEMENT OF THE CLAIM. The *identical invention* must be shown in as complete detail in the prior art as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements of the prior art must be

arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Claim 1 recites limitations including determining a color in combination with *selecting, based on the color, one of a plurality of different illumination sources appropriate to determine optical density of the color on the area*. At page 3 of the Office Action, the Examiner identifies col. 12, lines 12-16 of Hubble as allegedly teaching the claimed selecting. However, Appellants have failed to uncover limitations of the claimed selecting and the rejection is improper for at least this reason.

More specifically, col. 12, lines 12-16 of Hubble fail to teach or suggest a plurality of different illumination sources as positively claimed. The test sheets 30 as opposed to normal document images being fed from another sheet supply stack and transferred in the normal manner fails to teach the claimed different illumination sources. Furthermore, Appellants have failed to uncover any teachings in Hubble of the selection *based a color which is determined using electrical circuitry* as positively defined in claim 1. Appellants have failed to uncover any teachings of selecting LEDs of Fig. 3 of Hubble in a manner as claimed by Appellants.

In addition, the selecting of claim 1 defines the *selecting the illumination source appropriate to determine optical density of the color on the area*. Col. 12, lines 12-16 of Hubble relied upon by the Examiner fail to disclose or suggest the claimed selection appropriate to determine optical density as claimed.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason.

I. Positively-recited limitations of claims 9-12 are not disclosed nor suggested by the teachings of Hubble and the 102 and 103 rejections of the claims over Hubble are improper for at least this reason.

The method of independent claim 9 recites printing an area having a color in combination with the limitations of *based on the color, automatically selecting one of a plurality of different illumination sources in a densitometer without user input*. The Office at page 3 of the Action relies upon teachings in col. 3, lines 15- col. 4, lines 1-30 of Hubble. Appellants have failed to identify teachings in cols. 3-4 (or

otherwise) of the above-recited limitations of claim 9. For example, col. 3, lines 60+ of Hubble state that more than one illumination source may be turned on at once. However, such generic teachings with respect to merely turning on one or more illumination source may not be fairly interpreted to teach the above recited limitations of printing the area having the color and based on the color, automatically selecting one of a plurality of different illumination sources in a densitometer without user input.

Furthermore, the method of claim 9 recites receiving a signal indicative of optical density in the area from the densitometer after the selecting. The Office at page 4 relies upon teachings in col. 17, lines 50-65 and Figs. 2 and 3 of Hubble. The col. 17 teachings of Hubble refer to general circuit operations and Appellants have failed to uncover any teachings of the claimed receiving the signal indicative of optical density as positively claimed. Also, Appellants have failed to uncover any teaching in Figs. 2 and 3 of the claimed receiving the signal indicative of optical density.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason.

J. Positively-recited limitations of claims 13-20, 22-24 and 38-39 are not disclosed nor suggested by the teachings of Hubble and the 102 and 103 rejections of the claims over Hubble are improper for at least this reason.

The densitometer of claim 13 recites a sensor for converting radiation received from an area and a *processor coupled to the sensor for converting the received radiation to a standardized signal indicative of standardized optical density.* The Office at page 4 of the Office Action relies upon the teachings of cols. 4, col. 12 and col. 10 of Hubble as allegedly disclosing the above-identified limitations.

Referring to col. 4, lines 14-31 of Hubble, Appellants have failed to identify any reference to optical density as recited in the claims or converting the received radiation to a signal indicative of optical density. Furthermore, Appellants have failed to uncover in col. 4 any teaching of standardized optical density as specifically claimed.

Referring to col. 12, lines 24-29 of Hubble, Appellants have failed to identify any reference to optical density, converting received radiation to a signal indicative of optical density, or standardized optical density as specifically claimed.

Furthermore, Appellants have failed to uncover any reference to optical density, converting received radiation to a signal indicative of optical density, or standardized optical density in the generic teachings of col. 10, lines 46-62 of Hubble.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason.

K. Positively-recited limitations of claims 25-29 and 43-44 are not disclosed nor suggested by the teachings of Hubble and the 102 rejections of the claims over Hubble are improper for at least this reason.

Referring to page 5 of the Office Action, the Office recites Fig. 2 and Fig. 5 as allegedly teaching or suggesting the claimed *densitometer positioned to illuminate the area and generate a standardized signal indicative of standardized optical density of the area responsive to the illumination*. Appellants have failed to uncover any teaching with respect to optical density in Fig. 2 or Fig. 5. Appellants have also failed to uncover any disclosure in Hubble of the claimed densitometer generating a standardized signal indicative of standardized optical density as explicitly claimed. Appellants have searched Hubble and failed to locate any teaching regarding standardized optical density as specifically claimed.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason.

L. Positively-recited limitations of claims 39 and 44 are not disclosed nor suggested by the teachings of Hubble and the 102 rejections of the claims over Hubble are improper for at least this reason.

The claims recite *conversion of a signal indicative of optical density to a standardized signal indicative of standardized optical density*. On page 5 of the Action, the Office relies upon the teachings of col. 14, lines 35-44 of Hubble as

allegedly teaching the limitations. However, these teachings of Hubble disclose the test patch illumination should be at 45 degrees to the surface of the media on which the color test patch is printed and the color test patch measurement should be performed using flux diffusely scattered from the test patch at 90 degrees to that color test patch surface. Accordingly, the teachings of col. 14 disclose the orientation of the illumination to the surface of the media and the orientation of the measurement. Appellants respectfully submit that these teachings fail to disclose or suggest the claimed conversion of the signal indicative of optical density to a standardized signal indicative of standardized optical density as claimed.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason.

M. Positively-recited limitations of claim 17 are not disclosed nor suggested by the teachings of Hubble and the 102 rejections of the claims over Hubble are improper for at least this reason.

The claim recites *determination of a color of an area and selection of one of a plurality of different illumination sources responsive to the determination of the color*. On page 4 of the Action, the Office relies upon the teachings of col. 11, line 45 - col. 12, line 55 of Hubble in support of the rejection. Appellants have failed to uncover any teachings in Hubble of the claimed determination or selection responsive to the determination as explicitly claimed.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason.

N. Positively-recited limitations of claim 28 are not disclosed nor suggested by the teachings of Hubble and the 102 rejections of the claims over Hubble are improper for at least this reason.

The claim recites *determination of the color of ink printed on the area and selection of one of a plurality of different illumination sources corresponding to the determination of the color of the ink*. On page 5 of the Action, the Office relies upon the teachings of col. 12, line 33-41 and col. 8, lines 41-67 of Hubble in

support of the rejection. Appellants have failed to uncover any teachings in Hubble of the claimed determination or selection corresponding to the determination as explicitly claimed.

Appellants respectfully submit that positively-recited limitations of the claims are not disclosed nor suggested by the prior art and the rejections over Hubble are improper for at least this reason.

O. There is insufficient motivation to combine the teachings of Yamanishi with the teachings of Hubble and limitations of the claims are not disclosed and the 103 rejection of claims 6-8, 12 and 16 is improper for at least this reason.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See, e.g., MPEP §2143 (8th ed., rev. 5).

MPEP 2142 (8th ed., rev. 5) states that the concept of *prima facie* obviousness allocates who has the burden of going forward with production of evidence in each step of the examination process and the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.

Applicants refer to MPEP 2143.01 I (8th ed. rev.5) which provides obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so. *In re Kahn*, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006) (discussing rationale underlying the motivation-suggestion-teaching requirement as a guard against using hindsight in an obviousness analysis). The teaching, suggestion, or motivation must be found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

The Office states on page 6 of the Action that the combination is appropriate for the purpose of measuring value with high accuracy. Appellants respectfully submit the motivational rationale is insufficient in consideration of the above-recited

authority and the Office has failed to meet its burden of establishing a proper prima facie 103 rejection.

Appellants respectfully submit there is insufficient evidence that the teachings of Yamanishi if combined with the teachings of Hubble will result in any increase of accuracy. More specifically, Appellants respectfully submit there is insufficient evidence that the teachings related to the specific arrangement of Yamanishi are applicable to the specific arrangement of Hubble or that any improvement would result. Accordingly, Appellants respectfully submit the Office has failed to meet its burden of establishing proper motivation for a prima facie 103 rejection.

Also, the teachings of col. 17, lines 29+ of Yamanishi refer to measuring temperatures of a plurality of diodes and for generally monitoring temperature of the plurality of diodes. Appellants respectfully submit that the teachings of Yamanishi relied upon by the Office have not been demonstrated to disclose that the explicitly claimed *converting the received radiation to the signal indicative of optical density comprises compensating for the effects of heating of the selected illumination source during illumination of the area.* Appellants respectfully submit that limitations of the claims are not disclosed nor suggested by the prior art even if the references are combined and the Office has failed to establish a proper prima facie 103 rejection for this additional reason.

Appellants respectfully submit that the Office has failed to meet its burden of establishing a proper prima facie 103 rejection and the claims are allowable for at least this reason.


P. Conclusion

In view of the foregoing, reversal of the rejections of the claims is respectfully requested. For any one of the above-stated reasons, the rejections of the respective claims should be reversed. In combination, the above-stated reasons overwhelmingly support such reversal. Accordingly, Appellants respectfully request that the Board reverse the rejections of the claims.

Respectfully submitted,

Date: 11/21/06

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VIII. CLAIMS APPENDIX

1 1. [Previously Presented] A method for measuring optical density, the
2 method comprising:

3 using electrical circuitry, determining a color on an area;

4 using electrical circuitry, selecting, based on the color, one of a plurality
5 of different illumination sources appropriate to determine optical density of the
6 color on the area;

7 illuminating the area with the selected illumination source;

8 receiving radiation from the area responsive to the illuminating; and

9 converting the received radiation to a signal indicative of optical density
10 of the color on the area.

1 2. [Original] A method for measuring optical density according to
2 claim 1, wherein the signal indicative of optical density comprises a standardized
3 signal indicative of standardized optical density.

1 3. [Original] A method for measuring optical density according to
2 claim 2, wherein the converting comprises:

3 selecting a look-up table based on the color on the area, wherein the look-
4 up table associates the received radiation with a standardized signal indicative of
5 standardized optical density.

1 4. [Original] A method for measuring optical density according to
2 claim 2, wherein the selected illumination source provides illumination having a
3 first spectrum and said converting comprises compensating for at least one
4 difference between the first spectrum and a standard spectrum to generate the
5 standardized signal indicative of standardized optical density.

1 5. [Original] A method for measuring optical density according to
2 claim 2, further comprising:

3 generating a look-up table for converting the received radiation to the
4 standardized signal indicative of standardized optical density.

1 6. [Original] A method for measuring optical density according to
2 claim 1, wherein converting the received radiation to a signal indicative of
3 optical density comprises:

4 compensating for the effects of heating of the selected illumination
5 source during illumination of the area.

1 7. [Original] A method for measuring optical density according to
2 claim 6, wherein the selected illumination source comprises a light emitting
3 diode and the compensating for the effects of heating comprises measuring the
4 voltage across the light emitting diode.

1 8. [Original] A method for measuring optical density according to
2 claim 7, wherein the compensating for the effects of heating further comprises
3 generating a corrected signal indicative of optical density using a non-linear
4 relationship between the voltage across the light emitting diode and the signal
5 indicative of optical density.

1 9. [Previously Presented] A method for calibrating a printing
2 apparatus, the method comprising:
3 printing an area having a color;
4 based on the color, automatically selecting one of a plurality of different
5 illumination sources in a densitometer without user input;
6 illuminating the area using the selected illumination source; and
7 receiving a signal indicative of optical density in the area from the
8 densitometer after the selecting.

1 10. [Original] A method for calibrating a printing apparatus according
2 to claim 9, wherein:
3 the printing comprises printing a plurality of areas, each having a color;
4 and
5 the receiving comprises receiving a signal indicative of optical density in
6 each of the areas.

1 11. [Original] A method for calibrating a printing apparatus according
2 to claim 9, wherein the signal indicative of optical density comprises a
3 standardized signal indicative of standardized optical density.

1 12. [Original] A method for calibrating a printing apparatus according
2 to claim 9, further comprising:
3 compensating for the effects of heating of the selected illumination
4 source during illumination of the area.

1 13. [Original] A densitometer comprising:
2 at least a first illumination source to illuminate an area;
3 a sensor for converting radiation received from the area; and
4 a processor coupled to the sensor for converting the received radiation to
5 a standardized signal indicative of standardized optical density.

1 14. [Original] A densitometer according to claim 13, further
2 comprising a plurality of illumination sources.

1 15. [Original] A densitometer according to claim 14, wherein the
2 plurality of illumination sources comprise light emitting diodes.

1 16. [Original] A densitometer according to claim 13, wherein the
2 processor is further configured to compensate for the effects of heating of the
3 illumination source during illumination.

1 17. [Previously Presented] A densitometer according to claim 13,
2 wherein the processor is further configured to determine a color of the area and
3 select one of a plurality of different illumination sources to determine the
4 standardized optical density of the color of the area, and wherein the selection is
5 responsive to the determination of the color.

1 18. [Original] A densitometer according to claim 13, further
2 comprising a memory coupled to the processor, wherein the memory stores a
3 look-up table for converting the received radiation to the standardized signal
4 indicative of standardized optical density.

1 19. [Original] A densitometer according to claim 13, wherein the first
2 illumination source is selected from a plurality of illumination sources selected
3 from the set consisting of red, green, blue, and orange.

1 20. [Previously Presented] A densitometer according to claim 19,
2 wherein the first illumination source is selected from the plurality of illumination
3 sources based on the source having a color that is substantially a color
4 complement to an area of a media to be measured.

1 21. [Original] A densitometer according to claim 13, further
2 comprising a memory for receiving and storing data regarding inks used to print
3 one or more areas to be measured, and means for accessing the stored data to
4 determine the color printed on an area, the data being used to select a spectral
5 wavelength of the at least a first illumination source.

1 22. [Original] A densitometer according to claim 13, wherein the at
2 least a first illumination source to illuminate an area is exactly a single
3 illumination source having a spectral wavelength range narrower than the
4 spectrum of visible white light.

1 23. [Original] A densitometer according to claim 22, wherein the
2 single illumination source having a spectral wavelength range narrower than the
3 spectrum of visible white light comprises a light emitting diode having one of a
4 red, green, blue, orange color spectral output.

1 24. [Original] An article printed using the method of measuring optical
2 density of claim 1.

1 25. [Previously Presented] A printing apparatus comprising:
2 means for printing at least one ink on an area;
3 a controller coupled to the means for printing; and
4 a densitometer coupled to the controller, the densitometer positioned to
5 illuminate the area and generate a standardized signal indicative of standardized
6 optical density of the area responsive to the illumination.

1 26. [Original] The printing apparatus of claim 25, wherein the
2 densitometer comprises at least one light emitting diode.

1 27. [Original] The printing apparatus of claim 25, wherein the
2 densitometer comprises a sensor positioned to receive radiation from the area.

1 28. [Previously Presented] The printing apparatus of claim 25, wherein
2 the densitometer is configured to determine the color of ink printed on the area
3 and to select at least one of a plurality of different illumination sources for the
4 illumination and corresponding to the determination of the color of ink.

1 29. [Original] A printing media printed with the printing apparatus of
2 claim 25.

1 30. [Previously Presented] A method for measuring optical density
2 according to claim 1, wherein the determining comprises using data regarding a
3 marking agent used to print the color on the area.

1 31. [Previously Presented] A method for measuring optical density
2 according to claim 30, wherein image data is used to print the color on the area,
3 and wherein the data regarding the marking agent is accessed from the image
4 data.

1 32. [Previously Presented] A method for measuring optical density
2 according to claim 30, wherein the data is provided before the determining.

1 33. [Previously Presented] A method for measuring optical density
2 according to claim 30, wherein the data is provided during the printing of the
3 marking agent on the area and the data indicates the color of the marking agent
4 used to print the color on the area.

1 34. [Previously Presented] A method for measuring optical density
2 according to claim 30, further comprising accessing the data from storage
3 circuitry.

1 35. [Previously Presented] A method for measuring optical density
2 according to claim 1, wherein the determining comprises determining without
3 sensing of the area.

1 36. [Previously Presented] A method for measuring optical density
2 according to claim 1, wherein the determining comprises determining before
3 completion of printing of the color on the area.

1 37. [Previously Presented] A method for calibrating a printing
2 apparatus according to claim 9, wherein the printing comprises providing data
3 regarding a color of a marking agent used for the printing, and wherein the
4 automatically selecting comprises selecting using the data.

1 38. [Previously Presented] A densitometer according to claim 13,
2 wherein the standardized optical density provides optical density information in
3 accordance with a standard predefined before the conversion of the received
4 radiation to the standardized signal.

1 39. [Previously Presented] A densitometer according to claim 38,
2 wherein the processor is configured to convert the received radiation to a signal
3 indicative of optical density and to convert the signal indicative of optical density
4 to the standardized signal indicative of standardized optical density.

1 40. [Previously Presented] A densitometer according to claim 17,
2 wherein the processor is configured to select the one illumination source using
3 data generated during printing of a marking agent on the area.

1 41. [Previously Presented] The printing apparatus of claim 25, wherein
2 the means for printing comprises means for providing data regarding the at least
3 one ink, and one of a plurality of different illuminant sources of the densitometer
4 is selected for the illumination using the data regarding the at least one ink.

1 42. [Previously Presented] The printing apparatus of claim 41, wherein
2 the data is provided before completion of the printing of the at least one ink on
3 the area.

1 43. [Previously Presented] The printing apparatus of claim 25, wherein
2 the standardized optical density provides optical density information according to
3 a standard predefined before the illumination of the area.

1 44. [Previously Presented] The printing apparatus of claim 43, wherein
2 the densitometer is configured to convert a signal indicative of optical density to
3 the standardized signal indicative of standardized optical density.

IX. EVIDENCE APPENDIX

Appellants submit no evidence with this appellate brief.

X. RELATED PROCEEDINGS APPENDIX

Appellants are not aware of any related proceedings.